SSC-D02

HOMEWORK 4

Jean-Yves Le Boudec

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Exercise 1 *Write a program* `printAddr.c` *that takes as argument a host name or IP address written in dotted decimal notation and maps the input to an IP address. The program has to display:*

1. *the input*
2. *the corresponding IP address in dotted decimal notation*
3. *the corresponding IP address, in host order, printed as an unsigned long integer*
4. *the corresponding IP address, in network order, printed as an unsigned long integer*
5. *the DNS name*

Compile and run the program on at least two different machines. What is the program output in the following cases on each of the machines ?

1. `./printAddr 0.0.0.1`
2. `./printAddr localhost`

Exercise 2
1. *Compile and run the programs* `tcpClient.c` *and* `tcpServ.c`
2. *What is displayed by* `tcpServ` *if you type more than one argument to* `tcpClient` *(for example:* `./tcpClient <destHost> this is a test`*) ? Interprete the result, in particular the value of* n.
   Fix the problem by changing the way `tcpServ.c` *displays the data it has received.*
   Call `tcpServ2.c` *the new program you have written.*
3. *Rewrite* `tcpClient.c` *with Nagle's algorithm disabled. Call* `tcpClient2.c` *the new program you have written. Check what is now displayed by* `tcpServ2`*. Disabling Nagle's algorithm is performed by setting a socket option. For the syntax of the socket option, look at the multicast server example. Here, the protocol is* `IPPROTO_TCP`*, the option is* `TCP_NODELAY`*. The option parameter is an integer. The option is enabled if the option parameter is not equal to 0.*